NEW WATER SYSTEM CAPACITY ASSESSMENT STANDARDS AND GUIDELINES

New Water System Capacity Assessment Manual

JULY 1999

North Dakota Department of Health
Division Of Municipal Facilities
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INTRODUCTION

The 1996 Safe Drinking Water Act (SDWA) amendments require states to prevent new community and nontransient noncommunity (NTNC) water systems that lack technical, managerial, and financial capability from operating beginning October 1, 1999. The North Dakota Department of Health (Department) through the Division of Municipal Facilities (DMF) has established requirements that proposed new water systems must meet to demonstrate technical, managerial, and financial capability.

This manual is designed to help proposed new water system applicants prepare information to comply with the new capacity requirements. It provides information on:

- The Letter of Approval. This letter is required before a new water system can begin operation;
- The information required to be submitted to the Department for review, including Department forms;
- The approval process, including capacity criteria; and
- The authority by which the Department administers this new water system capacity assessment program.

If additional assistance or information is needed about applying for a Letter of Approval, please contact the DMF at (701) 328-5207 or 328-5225.

Chapter 1

New Water System Capacity Requirements

LETTER OF APPROVAL

New Systems Required to Obtain a Letter of Approval

All new community and NTNC water systems that begin operation after October 1, 1999, are required to obtain a Letter of Approval from the DMF before commencing operation. This includes new water systems that do not presently meet the definition of a community or NTNC water system upon commencing operation, but are designed to meet that definition in the future. For example, a development planned and designed to accommodate 30 dwelling units, even if only 5 units are initially provided water service, will have to meet the new system requirements as the future intent is clearly to become large enough to qualify as a community public water system.

Any system that has infrastructure in place before October 1, 1999, and then becomes a new community or NTNC water system by the addition of new users only (i.e., no source or treatment improvements are added to the drinking water infrastructure) is not required to obtain a Letter of Approval.

Community water system – a public water system (PWS) that serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

Nontransient noncommunity water system – a PWS that is not a community water system that regularly serves at least 25 of the same persons at least six months a year.

Letter of Approval Needed Prior to Operation

The DMF will issue a Letter of Approval to new systems deemed to have adequate capacity. It certifies that the new water system can begin operation. A new water system that begins operation after October 1,1999, that has not been issued a Letter of Approval may be subject to enforcement action. The Letter of Approval is issued only after the applicant submits all required information to demonstrate the system has adequate technical, managerial, and financial capability.

CAPACITY

Capacity is a process to determine the technical, managerial, and financial capabilities of the proposed water system to plan for, achieve, and maintain compliance with applicable drinking water standards given available water resources and the characteristics of the service population. Technical, managerial, and financial capability are three general highly interrelated areas of overall water system capacity. A water system cannot sustain overall capacity without maintaining adequate capability in all three areas. Indicators of capability within each area can be determined by responses to questions.

Technical Capability – the physical and operational ability of a water system to meet SDWA requirements. Technical capability refers to the physical infrastructure of the water system, including the adequacy of the source water and the adequacy of treatment, storage, and distribution infrastructure. It also refers to the ability of system personnel to adequately operate and maintain the system and implement required technical knowledge.

Key questions used to evaluate technical capability are:

Source water adequacy

- Does the system have a reliable source of drinking water?
- Does the source provide an adequate quantity of drinking water?
- Is the source water adequately protected?

Infrastructure adequacy

- Can the system provide water that meets SDWA standards?
- What is the condition of the system' s infrastructure, including wells or source water intakes, transmission, treatment, storage, and distribution?
- What is the life expectancy of the system' s infrastructure?

Technical knowledge and implementation

- Is the system's operator appropriately certified?
- Does the operator have sufficient technical knowledge of applicable standards?
- Can the operator effectively implement this technical knowledge?
- Does the operator understand the system's technical and operational characteristics?
- Does the system have an effective operation and maintenance program?

Managerial Capability – the ability of a water system to effectively function in a manner enabling the system to achieve and maintain compliance with SDWA requirements. Managerial capability refers to the system's administrative abilities.

Key questions used to evaluate managerial capability are:

Ownership accountability

- Is the system's owner clearly identified?
- Can the owner be held legally responsible for the system?

Staffing and Organization

- Are the system's operator and manager clearly identified?
- Is the system properly staffed and organized?
- Does the owner/manager understand the regulatory requirements and system operations?
- Does the owner/manager have adequate expertise to manage water system operations?
- Do personnel have the necessary training and qualifications?

Effective external linkages

- Does the system interact well with customers, regulators, and other entities?
- Is the system aware of available external resources, such as technical, managerial, and financial assistance?

Financial Capability – a water system's ability to acquire and manage sufficient financial resources to allow the system to achieve and maintain compliance with SDWA requirements.

Key questions used to evaluate financial capability are:

Revenue sufficiency

- Do revenues cover costs?
- Are water rates and charges adequate to cover the cost of providing water and maintaining the water system?

Credit worthiness

- Is the system financially stable?
- Does the system have access to financial capital through public or private sources?

Fiscal Management and Controls

- Are adequate books and records maintained?
- Are appropriate budgeting, accounting, and financial planning methods and controls used?
- Does the system manage its revenues effectively?

THE GOAL IS TO ENSURE SAFE DRINKING WATER

New water systems are required by the Department to obtain a Letter of Approval before commencing operation. But more importantly, a Letter of Approval demonstrates that the proposed water system used a process to assure adequate technical, managerial, and financial capability. A system that lacks capability in any of the three interrelated areas may have problems complying with the requirements of the SDWA. Proposed new water systems are now required to go through an approval process to ensure that they have adequate capacity. This assessment and approval process is intended to ensure that the public will be provided with adequate safe drinking water.

Chapter 2

New Water System Capacity Assurance

GENERAL REQUIREMENTS FOR A LETTER OF APPROVAL

To obtain a Letter of Approval, the following documents and information must be submitted to the DMF:

- A New Water System Application (including documentation that a valid water use permit has been obtained);
- An Operation Plan that includes: a technical plan, a management plan, and a financial plan;
- Plans and specifications;
- A construction schedule;
- Source water sample results;
- An operation and maintenance manual (if required by the DMF); and
- A Notice of Completion.

The New Water System Application and Notice of Completion forms are included in this manual. Guidance for completing the Operation Plan and operation and maintenance manual, and for submitting plans and specifications are also included in this manual.

The New Water System Application must be submitted on the forms provided by the DMF and must be signed by the developer or owner. If the owner is a corporation, the application must be signed by all corporation officials, or an individual legally empowered to sign in behalf of all corporation officers. The New Water System Application is included in Appendix 1.

OPERATION PLAN

In order to be considered complete, the Operation Plan must contain the following three parts: a technical plan, a management plan, and a financial plan. A checklist has been developed to be used to ensure that all required items are covered. It can be found in Appendix 2 and must be attached to the Operation Plan when it is submitted for review. Due to the complexities involved, the DMF strongly recommends that the applicant seek the assistance of a registered professional engineer in developing the Operation Plan. The applicant may also wish to seek the assistance of a licensed accountant or financial planner in developing the financial portion of the Operation Plan.

Technical Plan

The purpose of the technical plan is to assure that the project has been appropriately planned. It must demonstrate that the proposed system addresses the water supply needs of the service area, and that it is the most appropriate alternative that is reasonably available. The technical plan must cover the following items:

1) **General Information.** A description of the new water system and identification of the area to be served.

2) **Extent of the Water Supply System.** A description of the nature and extent of the area to be served and provisions for extending the water supply system to include additional areas. This includes population and land use projections and forecasts of water usage.

3) **Assessment of Drinking Water Standards Compliance**. An assessment of current and reasonably foreseeable drinking water compliance based on available monitoring data from the proposed water source(s).

4) **Alternate Plans.** A description of the alternatives considered (including interconnections with existing water systems) to provide water service to the area. This description must include the rationale for selecting the proposed water service alternative.

5) **Engineering Description**. A description of the water supply facilities to be constructed, including the construction phases and any future plans for expansion. This description must include an estimate of the construction and annual operation and maintenance costs.

6) **Class and Grade**. The anticipated class of the proposed water system and the required grade of operator.

Management Plan

The management plan must describe requirements needed to provide for effective management and operation of the system, and must cover the following items:

1) **Authority and Ownership.** Documentation that the applicant has the legal right and authority to take the measures necessary for the construction, operation, and maintenance of the proposed water system. It must include evidence of ownership indicating that the applicant is the owner of the proposed water system or has the legal authority to enter into contracts or agreements for the proposed water system.

2) **System Operation.** Information describing the tasks to be performed in managing and operating the system. The information must include administrative and management organizational charts, plans for staffing the system with certified

operators, and provisions for developing an operation and maintenance manual if required by the DMF.

3) **Operator Certification**. The owner must document its intentions regarding employment of at least one certified operator at the appropriate grade for the system, or provide a written commitment and time frame to obtain one. As an alternative, the owner may contract for system oversight by a certified operator from an existing PWS or other entity as long as the contract operator is appropriately certified for the same or higher class of system.

Financial Plan

The financial plan must describe the system' s projected revenues, cash flow, income, and debt to meet the costs of construction and the costs of operation and maintenance for at least five years from the date the applicant expects to begin operation. A sample financial spreadsheet is included in Appendix 3. The applicant may use this form or submit a different format as long as all required items are included.

PLANS AND SPECIFICATIONS

Two copies of complete plans and specifications must be submitted to the DMF for review and approval. Any changes to the approved plans and specifications must be addressed by submitting addenda or revised plans and specifications. One complete set of approved plans and specifications becomes the property of the Department, and one complete approved set will be returned to the applicant. The Department' s approval of plans and specifications becomes void two years after the date of approval if construction is not initiated prior to that time. Plans and specifications for projects exceeding a cost of $100,000 must be prepared by or under the direct supervision of a registered professional engineer licensed in North Dakota. The engineer must sign, date and imprint the seal of registration on the plans and specifications. Due to the complexities involved, the DMF strongly recommends that an engineer also be involved in the preparation of plans and specifications for projects totaling $100,000 or less. All plans and specifications must comply with the *Recommended Standards For Water Works (Ten States Standards),* American Water Works Association standards, and Department policies.

SOURCE WATER SAMPLING

New systems must document that their source water will meet or has the capability of meeting SDWA quality requirements. This documentation must be provided to the DMF as soon as possible in the approval process. Although authorization to construct may be obtained in advance of completing the required source water sampling, a Letter of Approval authorizing initiation of operation will not be issued until the DMF evaluates the source water sample results. It is the responsibility of the new water system to properly sample and arrange for testing of each drinking water source by a certified laboratory.

The source water sampling requirements will vary depending upon the proposed source type (i.e., purchased water verses new groundwater or surface water sources). The source water sampling requirements, including a list of the specific contaminants to be tested for, are contained in Appendix 4. Once in operation and upon qualifying as a PWS, new systems will be required to conduct all monitoring required under the SDWA as directed by the Department's Drinking Water Program.

OPERATION AND MAINTENANCE MANUAL

The applicant, if required by the DMF, must submit an operation and maintenance manual to the DMF for review and approval before system start-up. One copy of the approved manual must be kept at the water treatment plant (if applicable) and one with all other water system records. The engineer, individual, or party that designed the system shall prepare and appropriately sign and date the operation and maintenance manual.

A checklist has been developed that must be used to ensure that all required items are covered in the operation and maintenance manual. It can be found in Appendix 5, and must be attached to the manual when it is submitted to the DMF for review. The manual must contain the following items:

1) A description of the facilities;
2) Administrative and management organizational charts;
3) Plans for staffing the system with a certified operator;
4) An explanation of startup and normal operation procedures;
5) A routine maintenance program;
6) Records and reporting system;
7) Sampling and analyses program;
8) Staffing and training requirements program;
9) Identification of pollution sources at the water supply;
10) Safety program;
11) A leak detection program and plan for tracking water usage;
12) Emergency plan and operating procedures; and
13) Manufacturer' s manuals for all key components for the water treatment and distribution facilities.

The DMF expects that the system will review and update the operation and maintenance manual as necessary to reflect changes in the operation or maintenance of the water facilities.

CONSTRUCTION SCHEDULE

After all necessary approvals from the DMF are obtained (see Chapter 3 – The Approval Process), the applicant must submit a construction schedule to the DMF. The schedule must contain significant milestones, such as when construction will begin and the estimated project completion date.

NOTICE OF COMPLETION

After construction of the water system is complete, the applicant must submit to the DMF a Notice of Completion (Appendix 6) which certifies that the applicant has constructed the water system according to the approved plans and specifications. The engineer, individual, or party that designed the system must sign this form.

Chapter 3

New Water System Capacity Assessment & Approval

APPLICATION FOR A LETTER OF APPROVAL

The DMF recommends that prospective new water system owners apply for a Letter of Approval as early as possible. It will take time to get the required documents and information reviewed and approved. If information is missing or further information is needed by the DMF for the review process, it could extend the amount of time to grant approval. The following minimum guidelines will provide sufficient time to authorize construction and grant a Letter of Approval in a timely manner provided that complete information is submitted.

- Submit the New Water System Application and Operation Plan no later than **90 days** before you anticipate beginning construction.
  - The DMF will conduct a completeness review of the application and Operation Plan within 30 days of being submitted. The applicant will be notified in writing whether or not the application and Operation Plan is complete.
  - If the application or Operation Plan is incomplete, additional information will be required. The DMF will determine the adequacy of the applicant' s response to the incomplete items within 15 days of receipt and notify the applicant in writing.
- Submit plans and specifications no later than **30 days** before the anticipated bid-letting date.
- Submit the required source water sample results for DMF evaluation as soon as possible.
- Submit the operation and maintenance manual as soon as practicable before system start-up.

It is also recommended that a pre-application conference be held between the DMF and the applicant. Although this conference is not required, it is encouraged to provide answers to any questions the applicant may have.

CRITERIA THE DMF WILL USE TO ASSESS THE CAPACITY OF A NEW WATER SYSTEM

The below criteria have been developed to assess the technical, managerial, and financial capability of new community and NTNC water systems. In order to be eligible

for a Letter of Approval, these criteria along with the requirements described in Chapter 2 must be met.

Technical Capability Criteria:

1) Finished water shall meet all required drinking water standards.
2) The water facilities shall be operated and maintained by appropriately certified operators, or the system shall have a plan acceptable to the department to do so.
3) A valid water use permit shall be obtained.
4) Applicable local planning /zoning approvals shall be obtained.
5) The water facilities shall be constructed in accordance with plans and specifications approved by the Department.

Managerial Capability Criteria:

1) The system's owner(s), manager(s), and operator(s) shall be clearly identified.
2) The system shall comply with the state's operator certification requirements, or have a plan acceptable to the Department to do so.
3) The system shall maintain records concerning the design, construction, operation, and maintenance of the water utility, including all records required to document compliance under the SDWA.
4) The system, if so directed by the Department, shall develop an operation and maintenance (O&M) manual for the water treatment and distribution facilities.

Financial Capability Criteria:

1) The system shall establish and maintain a separate set of accounts for the water utility.
2) The system shall produce and utilize an annual budget.
3) Revenues shall be greater than costs.
4) The operating ratio shall be greater than 1.0*.
5) The coverage ratio shall be greater than 1.0**.
6) The system shall conduct a financial audit of the water utility at a frequency of no less than once every three years.
7) The system shall create, fund, and maintain a reserve account to be used strictly for emergency replacement of water system components or other unanticipated expenses related to the water system.
8) All service connections shall be metered.

* Operating ratio = $\frac{\text{Total annual water revenues}}{\text{Total annual O\&M and replacement expenditures}}$

** Coverage ratio = $\frac{\text{Total annual cash revenues - total annual O\&M and replacement expenditures}}{\text{Total annual loan/capital lease payments + total annual loan interest payments}}$

CONSTRUCTION START-UP

The DMF will review all required information, once received, including the project plans and specifications. Systems that have demonstrated adequate capacity will be notified by the DMF in writing that construction may begin. The DMF may require that a pre-construction meeting be held prior to commencing construction.

INADEQUATE CAPACITY DEMONSTRATED

The DMF will send a letter stating that the system does not have adequate capacity and describe what must be done to demonstrate capacity. If the system cannot or does not comply with the terms stated in the letter, authorization to initiate construction will be denied. If the system disagrees with the DMF' s determination, it may submit a written request for reevaluation within 30 days receipt of the denial notice. The request must contain the reasons for disagreeing with the determination and be signed by the water system owner.

CONSTRUCTION INSPECTIONS

Once the DMF has received the construction schedule from the applicant, the DMF may visit the site to determine whether the system is being constructed according to the approved plans and specifications and that all applicable requirements are being met.

CONSTRUCTION COMPLETED

After construction is complete, the system must submit a Notice of Completion to the DMF certifying that the water system was constructed according to the approved plans and specifications, addenda, and change orders.

NEW WATER SYSTEM START-UP

After the DMF has received the Notice of Completion and operation and maintenance manual, the DMF will issue a Letter of Approval. The system may then be placed into service.

LETTER OF APPROVAL VALIDITY

The Letter of Approval will remain valid as long as the water system is operating according to the Operation Plan, operation and maintenance manual, and approved plans and specifications. If modifications are made to the system that will alter any of these items, written notification must be made to the DMF describing the modifications. The Letter of Approval may be revoked if modifications to the system are made without first notifying and obtaining approval from the DMF.

The procedure for the revocation of a Letter of Approval is as follows:

1) The Department will issue a letter of intent to revoke the Letter of Approval to the water system by certified mail with return receipt requested;
2) If the water system disagrees with the revocation, it may request a meeting or hearing before the Department. This may be done by submitting a written

request within 30 days after receipt of the revocation notice. The request must contain the reasons for disagreeing with the determination and must be signed by the water system owner; and

3) The Department will make a decision concerning the revocation following the meeting or hearing.

LETTER OF APPROVAL TRANSFER

In order to transfer a Letter of Approval to a new owner, the following procedure must be followed:

1) The current owner must notify the DMF at least 30 days prior to the proposed transfer date;
2) The new owner must submit a transfer notice to the DMF;
3) The notice must include a written agreement between the existing owner and the new owner and state a specific date for transfer of the Letter of Approval; and
4) The agreement must address the responsibility, coverage, and liability between the current and the new owner. The agreement must also include a certification that all water system records and the documentation required to obtain the Letter of Approval will be transferred to the new owner before the transfer date. Documentation consists of the Operation Plan, approved plans and specifications, and operation and maintenance manual.

If the DMF does not receive the above described transfer notice and agreement, the current owner will be held responsible for any delays in the transfer process.

Chapter 4

New Water System Capacity Assessment Authority

STATUTES

North Dakota Century Code (NDCC) Chapter 61-28.1, *Safe Drinking Water Act*. The Department has the authority under NDCC 61-28.1-03 to administer and enforce a safe drinking water program pursuant to the federal SDWA. Under NDCC 61-28.1-03(16), the Department has the specific authority effective August 1, 1997, to ensure the capacity of new community and NTNC PWSs.

REGULATIONS

Pursuant to NDCC Chapter 61-28.1, the Department adopted North Dakota Administrative Code Article 33-17, *Public Water Supply Systems*. These existing regulations implement a safe drinking water program pursuant to the federal SDWA, and enable implementation of a capacity assurance program for new community and NTNC PWS.

North Dakota Department of Health
New Water System Application

This form is provided by the Division of Municipal Facilities to initiate the process to become a new water system. All new community and nontransient noncommunity water systems must submit this form in order to be considered for a Letter of Approval.

Submit the completed form to: Division of Municipal Facilities
1200 Missouri Avenue
Bismarck, ND 58506-5520

Applicant

Owner/Developer/Corporation: _____
Address: _____
City/State/Zip: _____

Contact person

Name: _____
Address: _____
City/State/Zip: _____
Telephone number: _____

Engineer

Name/Firm: _____
Address: _____
City/State/Zip: _____

General Information

Project Name: _____
County and Legal Description: _____
Water Sources: _____
Intended Service Connections: _____
Intended Service Population : _____

	Yes	***No***
Is a map showing the location of the proposed new water system attached to this form?	□	□
Is a copy of the water permit attached?	□	□
Are source water sample results attached to this form?	□	□
Is the Operation Plan attached?	□	□

STATEMENT OF CERTIFICATION

I certify that the above information, to the best of my knowledge, is true and accurate.

Name of Owner/Developer:_____
Corporation Officers, or Authorized Corporation Representative(please print): _____

_____
Signature(s) and Date(s): _____

Appendix 2: Operation Plan Checklist

Facility Name _____

Please check *Yes* or *No* to each question and include this checklist with your operation plan.

INFORMATION INCLUDED:	***Yes***	***No***	**Page Number**
Technical Plan			
Description of the water system	☐	☐	_____
Area to be served	☐	☐	_____
Provisions for extending water supply	☐	☐	_____
Population and land use projections	☐	☐	_____
Forecast of water usage	☐	☐	_____
Assessment of drinking water compliance	☐	☐	_____
Alternate Plans discussion	☐	☐	_____
Engineering Description (Selected Water Service Option)	☐	☐	_____
System Class and Operator Grade	☐	☐	_____
Management Plan			
Ownership authority	☐	☐	_____
Evidence of ownership	☐	☐	_____
System Operation (including administrative/management organizational charts)	☐	☐	_____
Operator certification	☐	☐	_____
Financial Plan			
Projected Revenues	☐	☐	_____
Cash flow	☐	☐	_____
Income and debt	☐	☐	_____
Construction costs	☐	☐	_____
Operation and maintenance costs	☐	☐	_____
Reserves created	☐	☐	_____
Five year financial projections	☐	☐	_____

Plans and Specifications

To be prepared by: _____

Estimated submittal date: _____

Anticipated bid-letting date: _____

Appendix 3: Sample Financial Spreadsheet

Facility Name: _____ Prepared by: _____ Date: _____

5 Year Projections	Year 1 Projected	Year 2 Projected	Year 3 Projected	Year 4 Projected	Year 5 Projected
Enter Year:					
1. Beginning Cash on Hand					
2. Cash Receipts:					
a. Unmetered Water Revenue					
b. Metered Water Revenue					
c. Other Water Revenue					
d. Total Water Revenues (2a through 2c)					
e. Connection Fees					
f. Interest and Dividend Income					
g. Other Income					
h. Total Cash Revenues (2d through 2g)					
i. Transfers/Additional Revenue Needed					
j. Loans, Grants or other Cash Added					
3. Total Cash Receipts (2h through 2j)					
4. Total Cash Available (1 + 3)					
5. Operating Expenses					
a. Salaries and wages					
b. Employee Pensions and Benefits					
c. Purchased Water					
d. Purchased Power					
e. Fuel Expenses					
f. Chemical Expenses					
g. Materials and Supplies					
h. Contracted Services					
i. Rental of Equipment/Real Property					
j. Transportation Expenses					
k. Laboratory Expenses					
l. Insurance					
m. Regulatory Expenses					
n. Advertising					
o. Miscellaneous					
p. Total Cash 0&M Expenses (5a through 5o)					
q. Replacement Expenditures (R)					
r. Total O&M plus R Expenditures (5p + 5q)					
s. Loan Principal/Capital Lease Payments					
t. Loan Interest Payments					
u. Cash Transfers					
v. Capital Purchases					
w. Other					
6. Total Cash Paid Out (5r through 5w)					
7. Ending Cash Position (4 - 6)					
8. Number of Customer Accounts					
9. Ave. Annual User Charge/Account (2d / 8)					
10. Coverage Ratio (2h - 5r) / (5s + 5t)					
11. Operating Ratio (2d / 5r)					
12. Year End Reserves:					
a. Debt Service Reserve					
b. Bond Retirement Reserve					
c. Capital Improvement Reserve					
d. Replacement Reserve					
e. Other					
13. Total Reserves (12a through 12e)					
14. Year End Operating Cash (7 - 13)					

Note: Attach additional sheets if necessary for clarification

Appendix 4: Source Water Sampling Requirements

General

New community and nontransient noncommunity public water systems (hereinafter new systems) are required to conduct source water sampling to document that their proposed drinking water sources meet, or have the capability of meeting, the quality requirements established under the Safe Drinking Water Act (SDWA). It is the responsibility of new systems to perform this monitoring and submit the test results to the Division of Municipal Facilities (DMF). All testing must be conducted by certified laboratories. It is imperative that new systems provide the test results to the DMF as soon as possible in the Letter of Approval process. **The DMF will not issue a Letter of Approval authorizing a new system to initiate operation before evaluating the required source water sampling results for compliance with the SDWA.**

As discussed below, the source water sampling requirements for new systems vary depending upon the proposed source type(s). The specific contaminants to be tested for as part of the Letter of Approval process do not include all contaminants regulated under the SDWA. The contaminants are primarily limited to those that have historically posed potential SDWA compliance problems for North Dakota pubic water systems (PWSs). The cost to complete the source water testing will be approximately $200-$250 per source.

The source water sampling required of a new system to obtain a Letter of Approval is different than the monitoring required under the SDWA. New systems, once in operation and upon qualifying as a PWS, must conduct all monitoring required under the SDWA as directed by the Drinking Water Program.

Consecutive Users

New systems that intend to obtain all of their drinking water from another regulated PWS (i.e., consecutive users) are not required to conduct source water sampling prior to receiving a Letter of Approval. Such systems, once in operation and upon qualifying as a PWS, will be required to conduct distribution system monitoring on an ongoing basis as required under the SDWA.

Ground Water Sources

New systems that intend to utilize ground water sources are required to analyze each source for total coliform bacteria and the following inorganic chemicals: antimony, arsenic, barium, beryllium, cadmium, chromium, copper, cyanide, fluoride, lead, manganese, mercury, nickel, combined nitrate/nitrite, selenium, sulfate, and thallium. It is also recommended (not required) that each source be analyzed for: total alkalinity, aluminum, calcium, chloride, conductivity, iron, magnesium, pH, silver, sodium, total dissolved solids, and zinc.

The DMF will evaluate the test results for compliance with the SDWA. The DMF will also assess the need for continuous disinfection. Continuous disinfection will be required for ground water sources that are subject to continuous or intermittent microbiological contamination, or that are determined by to be under the direct influence of surface water. Filtration treatment will

also be required for ground water sources determined to be under the direct influence of surface water unless strict filtration avoidance criteria are met.

New systems may not place ground water sources into service until authorized by the DMF. Once in operation and upon qualifying as a PWS, new systems using ground water sources will also be required to conduct additional source and distribution system-oriented monitoring on an ongoing basis as required under the SDWA. For systems required to provide filtration and disinfection treatment, such monitoring will include finished water turbidity, residual disinfectant concentration (both leaving the treatment plant and within the distribution system), and possibly disinfection byproducts.

Surface Water Sources

New systems that intend to utilize a surface water source presently in use by another PWS are not required to conduct source-oriented monitoring prior to receiving a Letter of Approval. The same testing discussed above for ground water sources must be conducted if a new surface water source (not presently in use by another PWS) is to be used.

New systems that intend to utilize a surface water source must provide filtration and disinfection treatment. Such treatment must be capable of ensuring compliance with the turbidity removal, disinfection, and applicable disinfection byproduct requirements set forth under the SDWA.

New systems may not place surface water sources into service until authorized by the DMF. Once in operation and upon qualifying as a PWS, new systems using surface water sources will also be required to conduct additional source and distribution system-oriented monitoring on an ongoing basis as required under the SDWA. Such monitoring will include finished water turbidity, residual disinfectant concentration (both leaving the treatment plant and within the distribution system), and possibly disinfection byproducts.

Responsibilities of Community and Nontransient Noncommunity PWSs

The primary goal of the federal SDWA, originally passed in 1974 and most recently amended in 1996, is to ensure the provision of safe drinking water to the public. The North Dakota Department of Health (Department), through the DMF and the Drinking Water Program, is responsible for implementation and enforcement of the SDWA in North Dakota.

- Community and nontransient noncommunity PWSs have numerous responsibilities under the SDWA. These responsibilities will be significantly expanded over the next ten years as the result of the 1996 amendments. In general, such systems must:
- perform all monitoring required under the SDWA using certified laboratories;
- provide treatment, as necessary, to meet all SDWA standards;
- report all SDWA violations to the Drinking Water Program and consumers;
- prepare an annual consumer confidence report for distribution to consumers;
- employ qualified (certified) operators for operation and maintenance of the water system;
- maintain adequate capacity (technical, managerial, and financial capability) to ensure

continued compliance under the SDWA;
- promptly address system deficiencies noted during sanitary surveys;
- obtain DMF approval prior to modifying or expanding the water facilities; and,
- maintain operation and maintenance records, including all records required to document compliance under the SDWA.

The monitoring requirements are dependent on a number of factors including population served, type and number of water sources, vulnerability of the water sources to contamination, degree and type of treatment, and the configuration of the distribution system.

The monitoring requirements for consecutive users (systems that obtain all of their drinking water from another regulated PWS) are limited to distribution system-oriented contaminants (total coliform bacteria, lead and copper, and possibly asbestos). The cost for small systems to complete this monitoring is approximately $300 per year. This assumes that minor, if any, additional monitoring will be required for total coliform bacteria due to detections, compliance with the action levels for lead and copper, and that a monitoring waiver can be granted for asbestos.

Small systems that have their own drinking water sources will incur a first-year monitoring cost of approximately $1600 per source to satisfy the source-oriented monitoring requirements, and approximately $300 to satisfy the distribution system-oriented monitoring requirements. The distribution system monitoring cost (which is subject to the same assumptions discussed above under consecutive users) will remain approximately $300 pear year for year two and beyond. For the source-oriented monitoring, the ongoing cost to satisfy the repeat requirements will average $300-$600 per year per source. The cost associated with the source-oriented monitoring may increase significantly if detections occur necessitating confirmation or increased monitoring.

The Drinking Water Program works with systems that qualify to minimize monitoring costs through the issuance of monitoring waivers, where permitted under the SDWA, and the use of entry points to satisfy the source-oriented monitoring requirements. For example, a system with two ground water sources may have only one entry point (which will satisfy the source-oriented monitoring requirements) if the two sources, after treatment (if any), are combined before entering the distribution system. Likewise, a system with a centralized treatment plant will have only one entry point.

Summary

The DMF and Drinking Water Program will assist new systems in fulfilling their responsibilities under the SDWA. New systems will be provided additional information concerning the SDWA prior to initiation of operation. Questions regarding the SDWA may be directed to the Drinking Water Program at (701) 328-5211.

Appendix 5: Operation and Maintenance Manual Checklist

Facility Name _____

Please check *Yes* or *No* to each question and include this checklist with your operation and maintenance manual.

Information Included:	***Yes***	***No***	**Page Number**
Operation and Maintenance Manual			
Facility description	☐	☐	_____
Administrative/Management organizational charts	☐	☐	_____
Staffing system with a certified operator	☐	☐	_____
Startup and normal operating procedures	☐	☐	_____
Routine maintenance program	☐	☐	_____
Records and reporting system	☐	☐	_____
Sampling and analyses program	☐	☐	_____
Staffing and training requirements	☐	☐	_____
Identification of pollution sources at the water supply	☐	☐	_____
Safety program	☐	☐	_____
Leak detection program and tracking water usage	☐	☐	_____
Emergency plan and operating procedures	☐	☐	_____
Manufacturer's manuals	☐	☐	_____

Appendix 6: Notice of Completion Form

North Dakota Department of Health

Notice of Completion
New Water System Construction

This form must be completed to receive a Letter of Approval from the North Dakota Department of Health.

Please return this form to:

Division of Municipal Facilities
1200 Missouri Avenue
Bismarck, ND 58506-5520

Facility Name: _____
Owner's Name: _____
Address: _____
_____
City/State/Zip: _____
Telephone: _____
Project Designer: _____

I hereby certify that the construction of the new drinking water system for the above facility was completed in general conformance with the plans and specifications, addendums, and change orders as approved by the Division of Municipal Facilities.

Project Designer's signature: _____ Date: _____

Owner's signature: _____ Date: _____